The MAC Flyer

FEBRUARY 1975

MAC'S New Look. Page 3

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The MAC Flyer

For Greater Efficiency
in MAC Air Operations

THE STAFF
LT COL JOHN W. RAY Supervising Editor
MAJ GEORGE D. BURGESS Associate Editor
CAPT ALBERT R. BARBIN, JR. Associate Editor
ISOBEL M. BRYANT Managing Editor
TSGT EUGENE REECE Art Director

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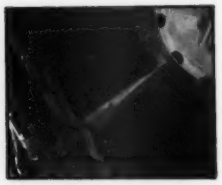
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MAC welcomes former TAC units as they bring their Herky Birds, Caribous, and C-123s into the enlarged family of MAC airlift.

MAC's New Look

The backbone of tactical airlift — the venerable C-130 Hercules returns to MAC as an airlifter.

Bringing with them an impressive background of combat, airlift and humanitarian accomplishments, some 560 former Tactical Air Command airlift aircraft and their crews now find themselves part of the Military Airlift Command.

The massive restructuring that transformed MAC into the world's largest airlift agency added some 230 active duty C-130 Hercules and 14,000 personnel to the MAC rolls. Also joining the MAC force are 25,000 Air National Guardsmen and Reservists around the country and their 330 C-130s, C-7 Caribous, and C-123 Providers.

These proud units have played a vital part in tactical airlift throughout the years and bring a proud tradition to MAC. THE MAC FLYER rolls out the welcome mat to the personnel of these former TAC units. Although space limitations restrict the list to airlift wings and groups, a hearty welcome is extended to personnel at all echelons.

ACTIVE DUTY UNITS

314 TAW, Little Rock AFB, Ark.
316 TAW, Langley AFB, Va.
317 TAW, Pope AFB, N.C.
463 TAW, Dyess AFB, Tex.

AIR NATIONAL GUARD UNITS

118 TAW, Nashville Metropolitan Aprt, Tenn.
118 TAG, Nashville Metropolitan Aprt, Tenn.
145 TAG, Douglas Municipal Airport, N.C.
166 TAG, Greater Wilmington Airport, Del.
167 TAG, Martinsburg Municipal Aprt, W. Va.
170 TAG, McGuire AFB, N. J.

133 TAW, Minneapolis-St Paul IAP, Minn.
133 TAG, Minneapolis-St Paul IAP, Minn.
109 TAG, Schenectady County Airport, N. Y.
157 TAG, Pease AFB, N. H.
172 TAG, A. C. Thompson Field, Miss.
137 TAW, Will Rogers Airport, Okla.

Originally designed as a glider, the C-123 Provider earned a reputation as a rugged airlifter in Southeast Asia.

137 TAG, Will Rogers Airport, Okla.
164 TAG, Memphis IAP, Tenn.
165 TAG, Savannah Airport, Georgia

146 TAW, Van Nuys Airport, Calif.
146 TAG, Van Nuys Airport, Calif.
195 TAG, Van Nuys Airport, Calif.
153 TAG, Cheyenne Municipal Airport, Wyo.

AIR FORCE RESERVE UNITS

94 TAW, Dobbins AFB, Ga.
908 TAG, Maxwell AFB, Ala.
918 TAG, Dobbins AFB, Ga.

302 TAW, Rickenbacker AFB, Ohio
906 TAG, Rickenbacker AFB, Ohio
907 TAG, Rickenbacker AFB, Ohio
911 TAG, Greater Pittsburgh Airport, Pa.

403 TAW, Selfridge AFB, Mich.
927 TAG, Selfridge AFB, Mich.
913 TAG, Willow Grove NAS, Pa.

914 TAG, Niagara Falls IAP, N. Y.

433 TAW, Kelly AFB, Tex.
921 TAG, Kelly AFB, Tex.
924 TAG, Ellington AFB, Tex.

439 TAW, Westover AFB, Mass.

440 TAW, Gen. Billy Mitchell Field, Wisc.
933 TAG, Gen. Billy Mitchell Field, Wisc.
928 TAG, Chicago O'Hare IAP, Ill.
934 TAG, Minneapolis-St Paul IAP, Minn.

442 TAW, Richards-Gebaur AFB, Mo.
935 TAG, Richards-Gebaur AFB, Mo.
926 TAG, New Orleans NAS, La.

452 TAW, Hamilton AFB, Calif.
904 TAG, Hamilton AFB, Calif.
940 TAG, McClellan AFB, Calif.

459 TAW, Andrews AFB, Md.
909 TAG, Andrews AFB, Md.
920 TAG, Keesler AFB, Miss.

STOL operations are the bread and butter of the C-7 Caribou.

Changing flight deck angles, a condition called "psychological set" and even windshield wiper operation help lure a crew into the approach lights.

The Question is "Why?"

A few months ago, a jet transport was cleared for a night ILS approach. A note on the approach plate page stated the glide slope was unusable below the decision height (200 feet). Weather reported was 400 feet scattered, measured ceiling 1,100 feet with five miles visibility and light rain. An auto-coupled approach with a visual transition was planned and completed. When cleared to the tower, the wind reported was 150 degrees at four knots. The following information is taken from a preliminary readout of the flight and cockpit voice recorders.

Before beginning the approach, the crew confirmed their decision height and set it on the radio altimeter, reviewed the missed approach procedure, and checked the aural identification on both ILS receivers. The crew completed the final checklist and the aircraft crossed the outer marker, on speed and on glide slope.

At about 1,000 AGL, the copilot reported, "I got the lights." The windshield wipers were put on low. Just after the copilot called out 500 feet, the captain ordered, "Put 'em on fast."

Following this command, the copilot called out 200 feet above minimums and later 100 feet above

"Why?"

minimums. As the middle marker was coming in he called, "Plus ten, that's minimums." They were right on glide slope. During the next 13.5 seconds the copilot made the following cockpit calls:

At 3.0 seconds, "I got a plus five, sinking to nine."

At 9.5 seconds, "Plus five sinking to ten."

At 12.0 seconds, "Plus five."

At 13.5 seconds, sound of first impact (approximately one-half mile short of the touchdown zone).

The National Transportation Safety Board report of this accident has not been issued, so any assessment of its causes is premature. However, the data we do have has several interesting aspects. It is furnished for discussion purposes only.

We can start with two basic questions. First, how can a qualified crew doing an auto-coupled ILS approach, in reasonably good weather and in what certainly appears to be an unhurried and professional manner, be in a good position at the middle marker and 13.5 seconds later crash into the approach lights while continuing routine callouts up to 1.5 seconds before impact and with no apparent sense of concern or urgency at any time?

Second, what visual indications or what other cues, equipment, or personnel were this crew depending upon that ultimately did not provide the safe flight they were confidently expecting right up to the moment of impact?

There are several possibilities. Four of them, including three potential visual illusions, are discussed below.

Several years ago, Captain Prosper Cocquyt of Sabena Airlines was awarded the Flight Safety Foundation award for his paper, "Sensory Illusions." One of the illusions he discussed is caused by a change in deck angle. Anytime a pilot changes the angle of his airplane by as little as one degree relative to a landmark (threshold, touchdown aiming point, etc.), it can create a significant height illusion.

For example, raising the nose only one degree at a 200-foot decision height, in a typical approach, instantly gives the appearance of being 75 feet higher than you are. Put another way, you can continue to descend at a normal rate for six to seven seconds and have the same apparent visual height you had at the time the nose was raised one degree. You will have covered approximately one-third of the distance to touchdown, and it will still look like it did at 200 feet. Your actual height woud be 125 feet. This is no time to increase your rate of descent. It is still another reason to avoid a "duck under."

A second possibility is that the runway and associated light pattern available to the pilots had an upward slope which creates an illusion of greater than actual height.

"It is still another reason to avoid a 'duck under'..."

The effect of any low scud or fog in the area and the increased rain suggested by the windshield wiper speed changed from "low" to "fast" both create an illusion of increased distance or height. These factors make approach or runway lights appear less bright and therefore they appear to be farther away. You are closer to the ground than you think.

"Psychological set" is a very common phenomenon. There are several kinds of psychological set and scientific definitions for them. However, for our purposes it simply refers to a very strong tendency to see what we expect to see, hear what we expect to hear, etc.

How might psychological set be involved in an incident such as we have described? There are at least two ways. First, it is completely reasonable for pilots to expect to be in the proper position for a continued safe approach when they know (by their instruments) that they are on localizer, on glide

slope at their 200-foot decision height, and at the middle marker. This "set" is the product of long years of experience. Unfortunately, it can make pilots particularly vulnerable to visual illusions which confirm expectations based on that experience. This is not "complacency."

The second possible way involves the changed distribution of time spent inside and outside the cockpit in current turbine-powered airplanes as opposed to their piston predecessors. There is very little data regarding this problem.

It has been estimated that once pilots got "visual" in the DC-3, they spent approximately 90 percent of their time outside the cockpit and only about 10 percent inside for an occasional confirmation of airspeed and altitude. It has also been suggested that this distribution is nearly reversed in today's airplanes. Regardless of the actual distribution, it seems clear that much more time inside the cockpt is required to fly present jets than was required by the pistons. The problem of sorting out hazy and conflicting visual cues has not been made easier in the process.

What then are the lessons we can learn from a flight safety awareness standpoint? With the very clear understanding that any speculation about ultimate cause factors for this particular accident is just that, speculation, there are at least three:

1. All pilots should be aware of the factors we have discussed.

2. The concept that all available tools should be used on all approaches is a basic principle which is fundamental to safe flight. It got this crew to the middle marker and decision height in a very good position to complete the approach.

3. The third, and perhaps the most important lesson, is "You haven't got it made at the middle marker." Whether or not visual illusions were a contributing factor in this instance, they are for real. If the glide slope is unusable for the remainder of the approach, the protection we have from that point on is:

a. Rate of sink. Remember, if the desired flight path takes 600 feet per minute, 900 feet per minute is 50 percent greater. Remember too, in representative conditions a sink rate of 900 feet per minute from 200 feet can result in a touchdown one-quarter mile short if 600 feet per minute was desired. In the example cited, the rate of sink after the middle marker was 900 feet for the first nine seconds and 1200 feet for the last five seconds.

b. Radio altimeter. Despite terrain effect, which is a real problem at some airports, radio altimeters give valid information about ground clearance during a particularly critical phase of flight. It also can help if you know the altitude at which you plan to cross the threshold. If you get readings approaching that area and are not clearly at the threshold, you are too low.

c. Barometric altimeter. Same considerations as with radio altimeter but with the obvious limitation that it does not measure terrain clearance, requires accurate setting, and has greater tolerances.

d. Airspeed. Airspeed changes because of low-level wind shear are creating increased concern. Effective monitoring is one of our best protections.

e. The go-around procedure. If things don't look right, go around!

— THE COCKPIT (United Airlines)

"Radar altimeters give valid information about ground clearance during critical phases of flight."

Lt Col Cushwa and Crew

GOOD SHOW

Left to right: Lt Col Phillip C. Cushwa, aircraft commander; Sgt Kenneth D. Adkins, flight mechanic; and Major Ray E. Dunford, copilot.

The number two engine had been changed on the T-29B and everything checked out on the ground as Lt Col Phillip C. Cushwa and his crew prepared to take the Convair up for a functional check flight at Scott AFB, Ill.

Colonel Cushwa advanced the throttles and shortly thereafter the aircraft lifted off the runway. Gear and flaps retracted normally and the engines were running smoothly at climb power. During the initial climbout, the crew heard a loud thump beneath the floor. Suddenly, both main and brake hydraulic pressure readings dropped to zero, and the odor of hydraulic fluid permeated the cockpit.

Employing emergency procedures, the flight mechanic, Sgt Kenneth D. Adkins, pulled the by-pass handle up to depressurize the system. He checked the hydraulic reservoir and found it empty. Sergeant Adkins then reserviced the reservoir with a gallon of fluid, but it drained out of the system. The emergency pump was turned on momentarily, but still neither of the hydraulic systems would pressurize. At Colonel Cushwa's direction, Sergeant Adkins pulled up the center floor boards adjacent to the main cabin door and discovered that the area was flooded with fluid.

With complete hydraulic failure, the crew established Conference Skyhook and completed Dash One procedures for an approach and landing.

On final for an ILS approach, the reservoir was again serviced with one gallon of fluid, but the fluid level still did not increase.

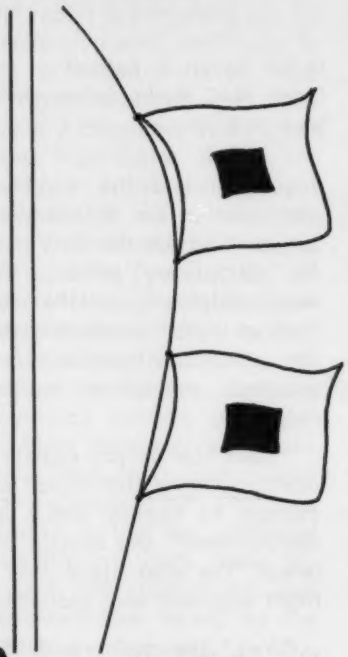
The aircraft passed over the approach end of the runway and touched down. Using engine reversing for both braking and directional control, Colonel Cushwa stopped the aircraft within 4,000 feet and used air brakes to hold it in place until it could be chocked and towed.

Maintenance personnel troubleshot the system and found a ruptured system by-pass valve. The bottom of the valve had blown off, apparently causing the noise the crew had heard after takeoff.

The highly professional manner in which this incident was handled prompted a congratulatory letter from General Paul K. Carlton, Commander, MAC. THE MAC FLYER adds its own congratulations and "Good Show" to Colonel Cushwa, Major Ray E. Dunford, copilot, and Sergeant Adkins of the 375th Aeromedical Airlift Wing, Scott AFB, Ill.

"Say Winds..."

by Major James M. Smith, USAF
Det. 9, 16th Weather Sq
Fort Rucker, Alabama



Recurrent discussions with pilots at the weather briefing counter reveal there is a general misunderstanding concerning conclusions that can be drawn from the values of observed or forecast surface windspeed and peak gust. A significant number of crew members believe these values are pure indications of the surface wind gust spread. This is not true and decisions based on this misconception will eventually lead to undesirable incidents. The following definitions and discussion should help clear up some of the misconceptions:

* Observed Surface Windspeed — The recorded wind during the one-minute period prior to the time of observation. A maximum range of 10 knots is used to compute the mean value. Wind speeds in excess of the 10-knot range are reported as gusts.

* Forecast Surface Windspeed — The maximum mean value expected during the forecast period.

* Peak Gust — The observed or forecast maximum speed of the surface wind during gusty conditions. When observed, it is the maximum windspeed during the 10-minute period prior to the time of observation. When forecast, it is the maximum speed expected during the forecast period.

* Gustiness — Variations in windspeed, measured from maximum to minimum, which exceed 10 knots, as a criterion. When this condition is met, the peak gust must be included in the observation. When the condition is expected to be met, the peak gust must be included in the forecast.

* Gust Spread — The maximum value of the range of windspeed during gusty conditions, "obtained" from the minimum and maximum values during the gust cycle that has the greatest variation in speed.

A simple subtraction of mean surface windspeed from the peak gust is meaningless for the following reasons:

* There is a relationship between mean windspeed and peak gust, but it is general and ill-defined.

* Mean windspeed is a statistical value and peak gust is a concrete value. Any assumption of gust spread must consider the lower end of the range open to large variations.

* The maximum gust spread does not necessarily occur with the peak gust.

The high degree of difficulty in observing and forecasting the maximum gust spread, as a continuous task, precludes providing this type of data as a normal service. When gustiness is a factor in flight planning, a thorough discussion with the forecaster should assist the pilot in estimating the gust spread that can be expected. The following points are offered as ideas to discuss:

* Reported or forecast gusty winds indicate a minimum gust spread of at least 10 knots, by definition.

* If the difference between the mean windspeed and the peak gust exceeds the limit for the aircraft, your decision is obvious because the maximum gust spread is **always** greater than this value.

* If the gusts are associated with thunderstorm or rainshower activity, the gust spread can, and may be, as high as the value of the peak gust; that is, the windspeed may rise from calm to the peak gust value, almost instantaneously, with the initial downdraft in the area immediately adjacent to the shower.

* If the gustiness is general, i.e., resulting from a tightened pressure field that is relatively broad, the gust spread may be well represented by the difference between the prevailing windspeed and the maximum gust. This is probably the condition that requires the most consideration and best judgment, because the indications are not as obvious.

Flight Fax (USAAAVS)

No one wants to get caught up in the rigors of an aircraft accident investigation, but in reality it's not the inquisiton that many aircrew members believe it to be.

Privileged Status

Lt Col Robert E. Baltzell
Chief, MAC Flying Safety Division
Scott AFB, Ill.

The squadron briefing room filled quickly, and only a few late stragglers in flight suits wandered in as the safety officer took his place behind the wooden lectern. The first 35mm slide had already been projected on the screen in the center of the small stage — the familiar MAC patch. The safety officer, who was a young major, made no comment as the projector advanced to the second slide. It read: MAJOR AIRCRAFT ACCIDENT, C-141, 50624, CLARK AIR BASE, P.I.

"Gentlemen," he began, "this presentation will explain the circumstances surrounding the C-141 major aircraft accident last month in the Republic of the Phillipines."

As the major read from his prepared script, another slide was advanced. The screen was filled with a lengthy narrative that was barely readable from the rear of the room. The title read: FOR OFFICIAL USE ONLY.

"You are cautioned," he continued, "that this briefing contains privileged information, not releasable in whole or in part without the expressed permission of the Secretary of the . . . ."

"Same old crap" a young captain commented to his lieutenant companion in the rear of the room. "A guy busts up an aircraft. He and his crew walk away from it and the first thing they do is hang him. Now we've got to listen to how this privileged safety information can't be used against the crew . . . . Crap!"

The major, annoyed by the muted conversation in the rear of the room, stopped reading his script. "Gentlemen," he said, "this is an extremely important briefing, but if you have some questions, I'll answer them now." The major looked directly at the young captain, who had not anticipated that his voice would carry so far.

"I'm sorry, Sir," the captain responded. "What I was saying, Sir, was that the privileged status of the accident report doesn't really jibe with what I've heard has already happened to the crew."

"Well," the major said, "I'm not certain what you've heard, but perhaps this is as good a time as any to clear the air. Safety investigations are privileged. The reports are protected by Air Force regulation and the information contained in the reports cannot be used outside the Air Force or for disciplinary actions. Testimony, statements, and the board's findings and recommendations are given privileged status for accident prevention purposes only."

"Then how do you explain the downgrading of the aircraft commander to copilot status after the accident?" the captain countered. "I've also heard that the flight engineer was grounded."

"Well," the major said, "your information is accurate up to a point. The aircraft commander has been temporarily placed in copilot status pending retraining and requalification. That's the prerogative of his commander and is usually done in the best interests of the individual as well as the Air Force. In this case, placing the aircraft commander in copilot status until the strain of the experience has subsided is probably the best possible medicine that can be prescribed outside the flight surgeon's office."

"But what about the flight engineer?" the captain asked.

"That's another case entirely," the major responded. "AFR 127-4 requires a collateral investigation any time death, serious injury, or major private property damage occurs in an aircraft accident. The collateral investigation is conducted to obtain and preserve evidence for use in claims, litigation, disciplinary action, and adverse administrative proceedings. The information in the collateral report is not privileged. In a collateral, sworn testimony is taken, witnesses must be read their rights, and this document becomes a means for disciplinary or other legal action. But an important point is that the collateral investigator is not allowed access to the safety board's deliberations, their findings, or the testimony taken under privileged status. But the collateral investigator is allowed access to the factual evidence. For example, maintenance records, crew records, flight data recorder tapes, aircraft parts, and photographs are all available to him. The main difference is that the collateral investigator proceeds along his own path and makes his own recommendations based on the evidence he uncovers. In this accident the flight engineer was found negligent by the collateral investigator, and grounding action was taken by his commander based on the collateral report. A flight evaluation board is in progress. This is legal action and the flight engineer has counsel and appeal avenues open to him."

"Let me see if I have this straight," the captain questioned. "In most major aircraft accidents two separate investigations are made, one privileged and one not."

"That's correct," answered the major.

"And disciplinary action," the captain continued, "can be taken on the basis of the collateral investigation, but not on the basis of the safety investigation."

"Right again," the major responded, "but keep in mind that commanders have certain actions they can take that are not disciplinary actions and really should not be thought of as punitive measures. As I mentioned earlier, these are actions often taken in the best interests of the individual and his fellow crew members. The collateral investigation often gets very little publicity. It's the safety report that steals the show and the collateral is pretty well behind the scenes, although not purposely so."

"Major, may I make a point?" The unit flight surgeon rose to speak.

"You're on, Doc. The floor's yours," said the major.

"You've made a good point," the Doc said, "and I'll back it up. An accident can be a very unnerving experience for anyone directly involved. I have to agree that temporary grounding or requalification for a crew member is good medicine. I know they didn't do it to John Wayne in old WW II movies, but then the Duke was never really responsible for the lives of his fellow crew members or a multimillion dollar aircraft."

"Thanks, Doc," the major said. "Any other points to be made?"

"I'll take you up on that offer," said the colonel seated in the front row. It was the squadron commander. "I'm the one responsible for the actions on these two crew members and if you're going to throw rocks, throw them at me. As squadron commander I have a few responsibilities you may not be considering. The crew of this aircraft is assigned to my squadron. Frankly, I think that, everything considered, the crew did a fine job. But, gentlemen, I can't take any chances. There's simply too much at stake here, not only expensive aircraft, but, more important, human lives. I downgraded the aircraft commander temporarily because I want him to get the benefit of some supervision before he sets out with his own crew again. I have every confidence he'll be back in the drivers seat with minimum delay. But, gentlemen, he really was a little shook over this experience, and he needs a little time to fit back in the groove. Now about the flight engineer. He made some serious errors. I took a look at the collateral report and other records and decided that he shouldn't continue to fly. He has some problems I'm not going to discuss publicly, but he's better off retraining into another career field. I'm convinced that this action is in his best interests as well as yours. After all, gentlemen, these accidents eventually affect all of us. I want to insure that each of you flies with a crew that is capable of doing the job. I don't want you to fly with anyone who can't hack the course, and neither do you."

"Thanks, Colonel," the major said. "I think that pretty well explains a point we've all been wondering about. Captain, does that answer your questions?"

"Yes, Sir, I've never really thought about it in those terms before."

"If there are no further questions, I'll return to the briefing. Gentlemen, the purpose of this briefing is to give you the benefit of the lessons learned from this accident. On the morning of . . . ."

Global Notes

no job too small

An HC-130 crew of the 71st ARRS at Elmendorf AFB, Alaska, saved the life of a 16-hour-old infant after a medevac mission from Bethel, Alaska, to Seattle.

The baby, born with a serious heart defect, was not expected to live; and Seattle was the nearest place where the surgery necessary to save her life could be attempted.

Capt John Harvell and his crew picked up one of the two portable incubators in the state and headed for Bethel. After an hour in the incubator, the baby's seriously low temperature stabilized near normal, and the C-130 took off for Seattle with the baby in the incubator and attended by a doctor. During the flight, the life-saving, but cold, intravenous fluid was warmed by the aircraft's signal lamp.

Upon arrival at Seattle, the doctor estimated her chances of survival at 30 to 40 percent, but following hospitalization and care, she improved to the point where surgery was not necessary. Two weeks later she left the hospital for Bethel. The doctor attributed her life and health to her medical evacuation, performed by the crew members with "professional competence" and "warm personal concern." Crewmembers were Capt Harvell, pilot; 1st Lt Fred Nickerson, copilot; 1st Lt Wayne Lindstrom, navigator; MSgt Bobby Tucker, flight engineer; SSgt Skip Ludwig, radio operator; SSgt Ed Weaver, loadmaster; and TSgt Jim Rogers and TSgt Richard J. Grady, pararescuemen. Sergeant Grady was on temporary duty from the 303 ARRS (Reserve) at March AFB, Calif.

flood victims saved

Two HH-3E helicopter crews from Det 13, 41 ARRW, Osan, AB, Korea, saved the lives of 36 persons stranded in heavy flooding near Kwang Ju City, Republic of Korea. Flying almost 10 hours in a five-mile radius around Kwang Ju, the crews were hampered by low, thick clouds and then darkness. 1st Lt Edward Fleming and his crew picked up 21 cold, wet, and hungry Koreans, including a one-day-old baby. Lt Col Travis Wofford and his crew recovered 15 persons in other areas, plucking seven of them from the thatched roof of their house. Together the crews saved 36 people and not one person had so much as a scratch!

Colonel Wofford's crew included 2d Lt Dennis K. Miller, copilot; SSgt Tommy L. Brown, flight mechanic; Sgt Gilbert G. Vaillancourt and Sgt Larry Guillingsrud, pararescuemen.

Lieutenant Fleming's crew included 1st Lt Larry Brooks, copilot; SSgt Dennis W. Hales, flight mechanic; Sgt Cledgi Chambers and A1C Steve Humburg, pararescuemen.

everyone joins in the act

It took four days, five aerial refuelings, and six aircraft, but when it was over, two injured seamen had been airlifted from a boat in the Pacific and brought back to a U.S. hospital for treatment.

In response to a request for assistance, the 303 ARRS (Reserve) at March AFB, Calif., launched an HC-130 in an effort to rescue two seamen on board a U.S. tuna boat 1,400 miles southwest of San Diego. One had the lower part of a leg severed when a cable snapped and whipped around it; the other had lost part of his hand trying to aid his friend. Before nightfall PJs SSgt Mike French and MSgt Robert Williamson had parachuted into the water and were pulled aboard the tuna boat where they assessed the men's injuries and recommended immediate medevac. Additional aircraft from the 41 ARRS, 76 ARRS, and 1550 ATTW joined the effort on the second day. A helicopter piloted by Capt George Stokes hoisted the patients aboard.

In the early hours of the fourth day the helicopter arrived safely at North Island and the injured seamen were transferred to the hospital.

Dear MAC Flyer

Editor, THE MAC FLYER
MAC/IGFE/Stop 114
Scott AFB IL 62225

Dear Sir

For a couple of years now I've been trying to get up nerve to enter the Flying Safety Writing Contest. But each time I get something down on paper, I tear it up and chuck it into the wastebasket. You see, I have very little confidence in myself as a writer. Sure, I have some good ideas -- ones which I feel would be of value to other crew members -- but I haven't sent them in because I know someone will make fun of my writing. I was lousy in English when I was in school. Maybe that's why I feel this way. It's tough when you know your writing is going to be criticized. I'll bet a lot of other potential authors feel the same way because you guys up at THE MAC FLYER are such literary experts.

It took a lot of nerve for me to write this. Maybe someday I'll get up the nerve to enter the contest.

Do you have any advice for folks like me?

Sincerely
Phil A. Quill
Phil A. Quill, Capt, USAF
Squadron Crew Member

Dear Captain Quill

Your apprehension is much like that of other crew members -- some of whom have won previous contests. You feel you need a good many years of experience before you could possibly enter the Flying Safety Writing Contest. Well, tain't so. We all should have listened better in our English classes, but never mind. A good, fresh idea is more important than how you write the article, although you should write it down as best you can. We have a full-time staff of editors (they all passed their English courses the first time) to check punctuation, spelling, and the like, so don't let that hold you up.

Sit down right now and pen your entry. Just use the following rules as guidelines:

1. Entries must be your own and not previously published.
2. Length should be between 1,000 and 3,000 words (6 to 14 typewritten pages, double spaced).
3. Submit two copies of each story (you may enter as many as you wish) with no identification except the title.
4. Attach a cover sheet with the story title, your name, address, and a brief biographical sketch.
5. Mail to:
   MAC Flying Safety Writing Contest
   MAC/IGFE/Stop 114
   Scott AFB IL 62225
6. Entries must be postmarked not later than 31 March 1975.
7. THE MAC FLYER must receive the story by 7 April 1975.

Let us hear from you. Who knows, you might even surprise your former English teacher. Good luck!

Cordially
The Staff
The Staff
THE MAC FLYER

Mishap with a Moral:

Rough Rider

The flight had been plagued with passenger loading problems that eventually caused a delay, but finally the MAC transport took off and headed southwest toward its destination. The copilot flew the aircraft from the right seat and the aircraft commander performed copilot duties from the left seat.

As the flight passed over the Kansas City area, the aircraft commander contacted Richards-Gebaur Metro and requested destination forecast for scheduled arrival time. Metro forecast low ceilings and thunderstorms in the destination vicinity, but neither enroute nor area weather was issued by Metro as none was requested by the crew.

As the aircraft whined southward over eastern Oklahoma at flight level 390, the aircraft commander requested and received clearance to deviate southeast to avoid towering buildups. After the aircraft had circumnavigated the weather, center furnished an alternate routing through central Oklahoma and north central Texas.

As the aircraft neared its destination, it was cleared to descend. The copilot, flying on autopilot, eased the power back and started down. Navigating by VOR and tacan, he alternately selected the navigation computer for backup distance and course information. The descent went smoothly until the aircraft passed through 15,000 feet. Suddenly the number one CADC kicked off, the elevator feel caution lights came on, and the aircraft overspeed warning horn blared. Unable to correct the CADC problem, the aircraft commander discussed the situation with the crew and decided to divert to a military base where it could be repaired. Center cleared the flight to 13,000 feet and issued direct routing to the diversion base. The copilot followed interim radar vectors while the aircraft navigation radios were returned. As he banked the aircraft toward its new heading, he saw cumulus buildups directly ahead. At about the same time center advised of significant weather in the area and recommended deviation to the south. The aircraft was now in and out of the clouds, and the copilot was having difficulty circumnavigating the buildups visually. Within a few minutes all outside references were obscured by weather. The navigator worked frantically to improve radar presentation on the scopes but radar returns were unreadable, appearing as high gain and ground clutter. Meanwhile, the aircraft commander was busy talking to the operations center, and the copilot now had his hands full controlling the aircraft, monitoring ATC clearances, and tuning navigation and communication equipment.

When the aircraft commander looked up, he saw clouds directly in their path. He told the copilot to level the wings, but the aircraft would not respond to autopilot inputs. Taking control, the aircraft com-

mander disengaged the autopilot and rolled the aircraft level. Suddenly, there was the deafening sound of hail beating on the aircraft. Severe turbulence and hail battered the plane for the next two minutes. The turbulence triggered 80-knot airspeed fluctuations and thrust the bird upward 1,000 feet. The airframe was subjected to loads between minus .6 and plus 2.1 Gs, and one of the passengers, whose seatbelt had not been fastened, was wrenched from his seat and thrown violently toward the rear of the aircraft. The impact caused a compression fracture of a vertebra. The scarred aircraft finally emerged from the weather and continued to a landing 20 minutes later. It had sustained hail damage to the radome, landing gear pods, engine nacelles, and wing surfaces.

Sifting through the sequence of events that led to the turbulent encounter, investigators concluded that the aircraft commander did not direct and coordinate crew activities that would insure safe flight. Although he had been briefed on the weather prior to takeoff, late arriving passengers had delayed the mission. Due to this long delay, the original weather briefing expired. Meanwhile, weather buldups in the Texas-Oklahoma area were intensifying. The aircraft commander obtained the terminal forecast en route but neglected to obtain area forecasts for his alternate routing and diversion base.

The navigator, who might have provided much needed assistance at the radar scope, was not advised of the deteriorating weather and was asked to tune the radar scope for weather avoidance only after the aircraft had entered the clouds. By this time, the weather was intense and he experienced difficulty interpreting radar returns.

The loadmaster was not warned of possible en route turbulence and, consequently, did not prepare the passengers for turbulence. Cabin "fasten seat belt" lights remained off throughout the brief upset and two of the passengers were not wearing seat belts.

Instead of monitoring the en route weather and coordinating with the navigator to steer around it, the aircraft commander busied himself with a company call that could have been postponed. The copilot attempted to navigate visually around the CBs, but radio calls, amended clearances, and other cockpit duties that demanded his attention interrupted his outside scan.

Weather flying is demanding business, as most aircrews have discovered at one time or another, and often requires the optimum in individual performance and crew coordination. This was not the first time these crew members had ever encountered bad weather. But in all likelihood, it was the first instance in which this aircraft commander had dropped his guard during such a severe encounter with the elements.

A Boy Ca

Well, my daddy left home when I was three,
And he didn't leave much to big sister and me,
Just this old guitar and a parachute was all I'd have.

Now I don't blame him cause he run and hid,
You see I wasn't too bright a kid,
And before he left he made sis promise I'd be a "Nav."

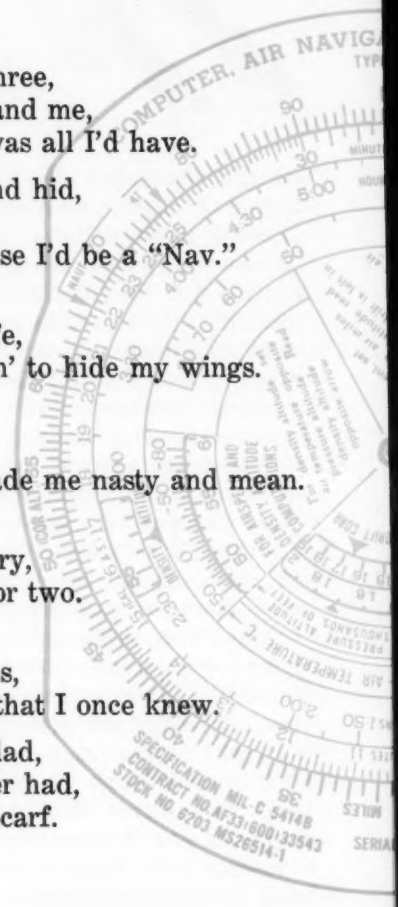
Being a navigator ain't the finest life,
It's filled with worry, decision, and strife,
And I roamed from club to club tryin' to hide my wings.

But I made a vow as I shot the stars,
I'd search the officers clubs and bars,
And murder the son of a gun that made me nasty and mean.

Now it was Elmendorf in February,
I just touched down; it was cold and airy,
Thought I'd stop and have a Scotch or two.

Down in the cellar in a suit for "Gs,"
A good-looking girl on both of his knees,
Sat the dirty fighter pilot "mother" that I once knew.

I knew that snake was my own sweet dad,
From the Air Force photo that my sister had,
His "Mach 2" patch and his purple scarf.



lled "Nav"

by Maj Orlen L. Brownfield
MAC/DPAT, Scott AFB, Ill.

He'd done quite well, he was a colonel now;
But . . . what the hell, I'd clean his plow.
I grabbed him by the neck and squeezed him till I thought he'd barf.

Then I kicked, hard, where I shouldn t have,
He went down on his knees, called me a "dirty-Nav,"
And he bit me on the leg as he came up off of the floor.

When he pulled out his survival knife,
I knew right then it was the end of my life,
But when I flashed my "dividers," it seemed to even the score.

Well, he backed off some and he said of the fight,
"You know, for a navigator, you did all right.
But you really ought to thank me . . . for everything that I did.

"You could've been a pilot shrew,
A slipping the surly bounds of near Mach 2,
But, I had to make a man out of this worthless kid.

"Son, maybe it's just that you don't understand,
It's them navigator wings made you a man,
You got strength and brains — something you'll always have."

Well, I think about him in the dark of night,
Every time I fly — every time I fight,
And if I ever have a son, he's gonna be a . . . flight nurse.

Letters To The Editor

Getting Our Thumps

I am writing in reference to your article, "Thump at the Bottom of the Slide," which appeared in the September 1974 issue of THE MAC FLYER. The person who wrote this article must be strictly anti-security police. If he had taken time to check into security police evacuation instructions on aircraft accidents, he would have found that the security police do not receive briefings on the proper use of evacuation chutes.

The way I see it, whatever the company policy was that dictated the two able-bodied men sitting near the exit to take up their positions on the evacuation chute, it forgot to tell security police that such positions are required for proper operation of the chute.

Even as bad as you make the security police sound, I am sure that if the two able-bodied men on the chute had advised the security police that it was required for proper chute function, the security police would not have "insisted that the two men move away."

Unfortunately for articles like this, I am glad the MAC FLYER isn't normally distributed to Security Police units.

Donald G. Leiber, MSgt. USAF
4661-5 Chicago Drive
Andrews AFB MD 20335

★ The source of the information concerning this incident came through official channels, originating with a commercial contract airline whose aircraft was involved. One purpose of the article was to help get the word to Security Police personnel that safety guards should be allowed to maintain their positions at the bottom of evacuation chutes. Sorry you were offended.

Reader Accolades

Congratulations on a superior issue. (September 1974). Your articles, "When Push Comes to Shove" and "Aircrew Fatigue," were especially noteworthy.

Keep the good words coming.

James Davis, Lt Col, USAF
Commander, 41 ARRS
McClellan AFB CA 95652

Pilot Survey

Attached is the result of a survey I had my safety officer conduct. I did not get as much from it as I had hoped; however, it did reveal some "real world" facts. Especially startling is the point made concerning "mess around" deviations. My guys are professionals, but to say there has **never** been a purposeful deviation from regulations or abuse of common sense safety rules would be a head-in-the-sand statement! Nevertheless, they are a sharp group of young guys and they are kept busy as hell and they know what will happen if they are caught misusing an airplane.

Hope you will find this useful. Perhaps it will make another supervisor take a little closer look at his operation — I certainly did.

Jay M. Strayer, Lt Col, USAF
Commander, 1551 FTS
Hill AFB UT 84406

★ Thanks. The survey will appear in the April issue.

An Open Letter to MAC

As the latest member of the MAC fleet of aerospace mass movement vehicles, I felt it was time to introduce (or in some cases, reintroduce) myself. I go by many names: Hercules, Herk, Herky Bird Trash Hauler, Brown and Green Trash Machine, and by some that are not printable; but my numerical designation is C-130E.

In some ways I am a lost brother (or father or grandfather) coming home. When I was first built back in the dark ages by Lockheed, I was the first of a proud tradition of Lockheed airlift aircraft. At first glance you will see many of the family traits. Of course, I am not as sleek as a 141 or a C-5, nor do I fly quite as fast (is that an understatement!). Probably the first thing you will notice about me that is different is those big "fan" jet engines I have. Well, those "fans" are what help me fly. Before the Lockheed people knew better, they thought only airplanes with propellers would fly. Of course, now they know different. The propellers cause a real problem to people who work around the aircraft. If you are not careful, they can give you a haircut about neck level. At the least, they will give a headache you may never forget. So, remember, when working around me, stay away from the prop arc. Even if the props are static, you can never be too careful.

The props can also create another problem. Because of the prop, FOD is easily blown around by the prop wash. This flying FOD could not only cause damage to other aircraft but personnel injury as well.

There is one more hazard associated with my props. They are reversible. That means that instead of blowing air back toward the tail, the air is pushed off the front. We use this ingenious device to slow down the aircraft on the runway after landing and to keep taxi speed down. This is not a real problem, except when blocking out. Then there is the chance I may have to stop quickly if something goes wrong. A marshaller not ready could find himself sitting on the ramp (rather suddenly) if he isn't prepared. And please believe your eyes if you see me taxiing in re-

verse. I can do that too.

The purpose of this little letter is not to unduly scare you. I am glad to be back. Just treat me right if you see me in your ramp. I am doing the job, a little lower and a little slower, but doing it nonetheless. It's good to be back.

Yours,
The HERKY BIRD

★ Welcome back, and thanks to Capt Marc H. Weiss, 316 TAW/SE, Langley AFB, Va., for forwarding your letter. Your sister birds in ARRS and AWS also welcome you.

Pilots and Loadmasters Have Misconceptions

The following letter may seem strange coming from a loadmaster but I am also a civilian commercial pilot with multi-engine, instrument, and flight instructor ratings.

From conversations with pilots in my squadron and from listening to conversations on the intercom while in flight, I have come to the conclusion that many of the pilots in MAC are not familiar with airspace rights-of-way and controlled air space limits. I deduce that this is because, first, the modern pilot in the military is trained in an environment of positive control almost from his first flight and also the majority of flying by MAC crews is at altitudes above 18,000 feet, the present floor of positive controlled airspace. (There is a proposal to lower positive controlled airspace to 12,000 but it hasn't gone into effect yet.)

Picture a C-5 crew conducting local training in the Dover local area. After completion of a low approach the aircraft and crew are being vectored back to re-intercept the ILS for another approach. The weather is severe clear with visibility unlimited. About ten miles away, south of the base, a light aircraft crosses in front of the C-5 about two miles, apparently at the same altitude. The C-5 crew starts grumbling, "Those stupid pilots in light airplanes, wandering around all over the sky. What's he doing at our altitude anyway?" But was he trespassing at their altitude? The answer is no! The traffic control area of an airport extends outward for a five-mile radius (with the exception of terminal control areas which are designated in the FARs). The only aircraft that are subject to control are those on IFR flight plans under IFR procedures for which separation is provided for altitude and distance. At altitudes above 3,000 feet there is a procedure to insure altitude separation. That is, westbound VFR aircraft fly at altitudes of even thousands plus 500 feet, while eastbound traffic is at odd thousands plus 500. Of course, IFR traffic is on the thousand without the 500 feet. This provides for separation of 1,000 feet between IFR traffic going in opposite directions and 500 feet between IFR and VFR traffic. Below 3,000 feet there is no specified traffic separation under VFR, with no altitudes specified for direction of travel. In the afore mentioned case, the C-5 is assumed to be at 1,600 feet, which is the normal glide slope interception altitude at Dover and the altitude that ATC normally uses to vector local traffic when remaining in the local area for approaches. Most of the local civilian pilots are aware of this and do not fly at this altitude; for that matter, they give the air base wide margins of clearance when flying in the local area. This is strictly a matter of individual concern, however. There is no regulation that specifies that light aircraft will give way to military aircraft or that they will remain clear of military bases other than for the specified distance for radio contact with control towers and published restricted airspace. A transient aircraft is not going to know that there are C-5s maneuvering at 1,600 feet. In this particular case the light plane has just as much right to be there as the military aircraft because they are both out of the airport traffic area.

Another assumption that I am becoming convinced is made by many military pilots is that ATC provides clearance from all traffic at a specified altitude. If approach control or en route clears you to an altitude below 18,000 feet in VFR weather, all he is insuring is that there are no other aircraft in that area operating under IFR that might constitute a conflict. There are no provisions for clearance from aircraft operating under VFR. AFM 60-16 and FAR part 91 both state that in VFR conditions pilots are responsible for clearance from other traffic. ATC will provide clearance from reported traffic but there is no rule that says unreported VFR traffic can't be there.

Another problem that I am concerned about is the tendency for C-5 loadmasters to put entire loads of cargo on one side or the other of the airplane. The Dash One and Dash Five both say it is not necessary to compute a lateral C. G. It doesn't say, however, that it is good common sense to load a hundred thousand pounds of cargo all on the right side or the left. Although it doesn't exceed the structural limitations to do so, what about the possibility of losing an engine just at the moment of liftoff or having to fight a strong crosswind all the way down through the flare? The extra weight concentrated on the one side may be just enough to cause the pilot to lose it. Who's going to tell the widows and children that the book said it was okay to load the entire load on one side when the extra weight on that side caused the pilot to lose control and the airplane dragged a wing and cartwheeled. It would have been just as easy for that loadmaster to have split the load so that the weight would have been evenly divided and the wings fairly well balanced.

I feel that the things I have mentioned should be stressed to both of the crew positions involved. Either discrepancy could cause a tragic accident. In fact, in the case of the right-of-way and airspace, it probably already has.

Thank you for the opportunity to present my opinions on these subjects.

Samuel E. McGowan,Jr..
TSgt, USAF
3 MAS
Dover AFB DE 19901

T
Hatch

by Capt A. R. Barbin
Associate Editor

It starts out as a routine training flight, but an overconfident instructor manages to push himself and his student beyond the point of no return.

Cold, clear, and calm, the day was just right for flying and the three pilots were lighthearted as they silently went about their preflight paperwork duties.

"I'll check the notams. You guys go ahead with the paperwork," said the husky instructor pilot, snuffing out a cigarette in a wobbly standup ashtray. I can have only two more today, he thought as he walked toward the NOTAM board.

Captain Duane Miller, a veteran of seven years in MAC, had suddenly found himself in the role of "an old head" in his C-141 squadron. He remembered the days when the squadron was full of real old heads — only four or five years ago, to be exact. Somebody up there must like me, he would think occasionally, reminding himself how fortunate he had been to avoid flying a desk. And he still thought how lucky he had been to fly the Jolly Green while SEA was still a hot spot. There he had racked up two Silver Stars and six Distinguished Flying Crosses, all of which prompted one flight engineer to comment that Duane should be eligible for retirement since he already had accumulated a career's worth of experience and close calls.

There was nothing new on the NOTAM board, just as Duane knew there wouldn't be. Checking the board was just his way of letting the two students complete the paperwork without feeling as though their instructor was looking over their shoulders. Both students, Roger Whidbey and Chris Jordan, were pretty new to MAC. They had about 800 C-141 hours apiece and had somehow managed to gravitate together from pilot training, through Altus,

ne Flight of 38

and finally to their present squadron. Today they were going up to round off some rough edges prior to their aircraft commander evaluations.

"Excuse me, Sir, but we've finished preflight and the bird is ready to go." It was Sergeant Ellis Carter, the flight engineer.

His sudden appearance startled Duane somewhat, but he turned and smiled at this senior master sergeant who was by anyone's definition the real old head on the crew. The two men felt a mutual trust.

"Thanks, Sarge. We're just wrapping things up in here. Give us about ten minutes. Hey, by the way, aren't you getting a little short?"

"Would you believe this is my last flight?" grinned the sergeant, digging the crusted ashes out of his stained pipe with a penknife. "This time next month I'll be down in Tennessee hunting coon and stirrin' up a little home brew."

Duane was pleased with the way his two "boys" had completed their paperwork. He followed along as they filed the flight plan. Sergeant Carter joined the three pilots as they stepped outside operations into the cool

air. Together, the four of them began their last walk to the nearest Starlifter.

* * *

"Hatch three eight, contact departure control on two five nine four. Winds three two zero at eight, cleared for takeoff," instructed the tower controller in his deep, southern accented voice. The C-141 taxied toward the approach end of runway 35 with Roger in the left seat and Duane in the right. Chris, riding the jump seat until his turn to fly, rechecked the TOLD card on the instrument panel.

"Lineup check completed," reported Duane as the bird completed its turn on the runway.

* * *

Roger advanced throttles to 70 percent N1, scanned the vertical scale engine instruments, and smoothly released the brakes.

"Lookin' for one point nine five EPR," Roger whispered to himself.

The hungry turbofan engines gulped the cool morning air, quickly accelerating the empty white and gray airlifter to rotate speed.

"Rotate," stated Duane while quickly scanning runway and instruments.

Concentrating on his attitude director indicator, the pilot applied firm but smooth back pressure until the ADI indicated eight degrees. With its wings gracefully flexed for flight, the unique profile of the Starlifter soared into a new day.

"Gear up," directed Roger elatedly. He always sensed a thrill during takeoff and initial climbout and had no qualms about expressing his delight. And spring-loaded for what was coming next, he was already planning the emergency return. Sure enough, Duane leaned forward and depressed the number four fire test switch.

"Simulated, fire indications on number four."

Roger stretched his lanky arm across the center console, placed his hand on the number four fire "T" handle, and called out the bold print procedures.

"Fire handle, pulled. Agent, discharged. Engine fire, takeoff continued checklist."

Duane retarded the affected throttle and read the engine fire checklist. Roger directed his instructor to secure vectors as previously briefed.

"Departure control, Hatch three eight requesting vectors for an ILS final, runway three five — simulated emergency return."

"For vectors to ILS runway three five, turn right zero nine zero, climb to and maintain two thousand five hundred. Squawk zero three zero zero," instructed the controller.

"Wilco, Hatch three eight."

"Engineers report," challenged Duane, finishing up the emergency checklist.

"Check completed. Fuel remaining, ninety eight thousand six hundred pounds. Sir, I rechecked the emergency return landing data and it's good. Two engine Vmca is one hundred twenty four knots," added the old pro.

"Thanks, Sarge. Engine failure check completed," replied Duane as he placed his ringed set of yellow pages on the side console.

"Duane, take control of the aircraft while I get set up over here for the approach and briefing," Roger directed, acutely conscious of each item required on the briefing.

Roger briefed, reset his command markers, and tuned his navigation equipment for the approach.

"Hatch three eight, six miles east of runway three five, maintain one seven zero degrees. Expect a slightly extended pattern for traffic spacing," radioed approach control.

"Wilco, Hatch three eight."

"Duane, I'll take it now."

Roger took the aircraft again, confident and eager to wire the approach and landing to the satisfaction of his instructor.

"Flaps approach," called Roger.

Then Duane Miller made a decision that would change the very nature of their local flight.

"Hold off on the flaps, Roger," said Duane, casually. "This is a perfect opportunity to go through a simulated two-engine approach. Use only one and two thottles to fly the rest of the approach down to decision height."

Roger glanced back apprehensively at Chris, who had been enjoying the show from the jumpseat. His old buddy shrugged his shoulders and frowned.

"Ah, Duane, the only time I've ever done one of these was in the simulator," replied Roger. "Are you sure it's okay to do this? I mean, with our altitude and all?"

"Sure. Actually, see, we'll be making a three-engine approach. I'll just feed in number three before we reach minimums," explained Duane. "A two-engine approach is no big deal as long as you maintain airspeed above two-engine Vmca."

"I'm gonna need a little help with the numbers then," Roger reminded his instructor. Roger was growing tense now, and his palms were damp.

"Okay, two-engine approach speed is charted threshold speed for landing flaps plus twenty knots. That'll up our approach speed to one hundred, forty six knots. Then, add thirty knots on downwind and twenty knots on base and final prior to the descent point." Duane rattled off the procedures like a sports announcer. He knew his two-engine procedures well. "When you intercept the glide path, go flaps approach and slow to approach speed or Vmca, whichever is higher. You'll get a good feel for what it takes to keep the bird on an even keel."

Roger grimaced. He could feel sweat running down the side of his face now. He was having trouble remembering the numbers because this sudden change of plans had come so fast.

"Would you repeat the speeds again?" he asked Duane. "I didn't get all that."

Duane repeated the speeds and Chris was beginning to squirm in the jumpseat. He didn't want to question Duane's decision, but final approach just didn't seem to be the place for a simulated two-engine approach. He remembered reading something about maintaining 5,000 feet above the ground during simulated two-engine approaches. Perhaps a tactful question —

"Copilot, engineer."

"Go ahead, engineer," Duane answered.

"Damn, sir. You think we should be screwing around this close to the ground on two engines? We're illegal and asking for trouble. So would you do an old man a favor and advance number three?"

"Sarge, we're indicating one hundred and sixty five knots and one and two engines are loafing along at sixty percent N1. We'll just fly a few more miles and I'll put number three back on the line," rebutted the instructor.

"Hatch three eight, four miles from the outer marker, turn right to three two zero degrees. Cleared ILS runway three five approach. Number two following a T-29 on a two mile final, full stop. Continue approach," directed the tower.

"Damn that Convair. Hope he gets his butt off the runway so we can get a touch and go. We don't need any go-arounds today. The only other airplane flying today in the whole area — and we luck out and get behind it on final."

"Hey, Duane, why don't we take it around and try it again," implored Roger, his anxiety reflected in a steel-like grip on the yoke.

"Naw, it'll be a little tight but we'll make it," Duane answered.

But it was too tight for the tower controller. "Hatch three eight, T-29 rolling to the end of the runway. Go around. Repeat, go around. Acknowledge!"

Upon hearing tower's go-around command, Roger Whidbey instinctively increased pitch attitude and rapidly advanced two throttles to TRT. The asymmetric thrust took hold and the aircraft started a rolling right turn. Looking quickly across to Roger, Duane shouted, "What the hell are you turning for."

Horrified, Chris leaned forward in the jumpseat and saw the airspeed decrease rapidly through one hundred and fifteen knots. The aircraft responded predictably to the asymmetric thrust and continued its rolling turn through 60 degrees of bank. Chris yelled, "Below Vmca — throttles, throttles, throttles!"

"Goddammit!" Duane clutched and attempted to firewall three and four throttles but Roger's clenched fist on one and two restricted full throttle travel. "Get your hands off the throttles, Roger," cried Duane.

"I can't control it! I can't control it!" shouted the lieutenant.

Rolling through 90 degrees, the staggering Starlifter howled and roared, trying to claw its way back into the sky. Its final agonizing descent had begun. As the dying aircraft knifed through the remaining 100 feet, Duane clutched his yoke with both hands, closed his eyes, and whispered over the interphone, "Oh, God, I'm sorry. I'm sorry."

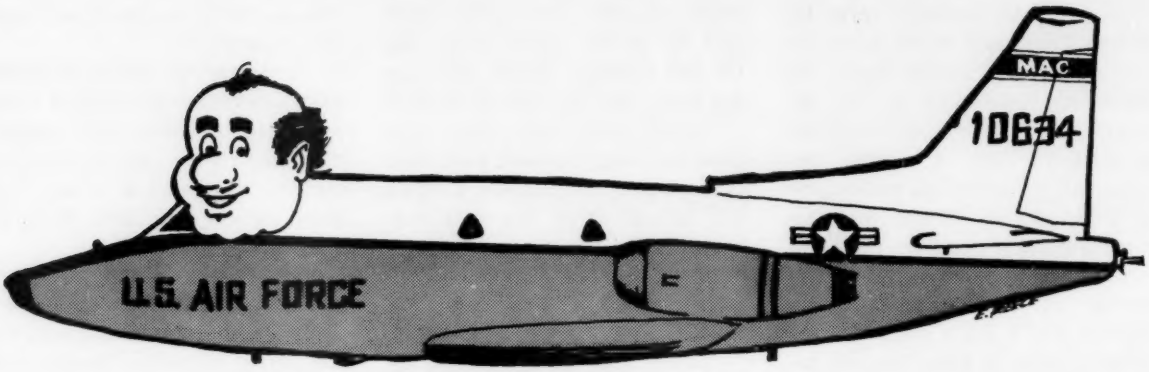
In the control tower, Staff Sergeant Eugene Egan stood in shock and disbelief as he watched the C-141 fall out of the sky, impact right wing low on the far side of the runway, and scatter in a bright orange explosion. Instinctively the sergeant picked up the red crash phone.

Major George Holm and Captain Dick Lewis braked their T-29 to a stop on the parallel taxiway and watched in disbelief as base crash equipment raced to the mushrooming column of orange and black.

Hatch three eight and crew had terminated.

The Master Manipulator does it again. This time he comes up with his own set of emergency procedures and forces a very special VC-137 out of the pattern.

C.R. TERROR



"C'mon, Sammy. Gotta get this bird to Andy air patch to fetch the IG team back to Scotch before martini glasses begin their familiar ring.

"You get the right side; I'll preflight the left. Last one finished buys the first round when we get back," barked the Aviator with Avoirdupois.

Long Suffering Sam unzipped his flight bag and reached for his familiar, well-worn set of yellow plastic pages. Knowing the errant ways of his boss, Sam decided to complete the entire preflight.

After checking the forms, he removed the left pitot tube cover that C. R. had overlooked. While Sam inspected the nose gear well, C. R. rounded the left wing and dashed for the crew entrance door. Spotting Sam emerging with the nose gear pin in his hand, he blustered, "Sammy, m'boy, you've hardly begun. What are you doing, inspectin' each rivet? C'mon boy, time's a wastin'."

"Yessir, I'll be along in a few minutes. Just got a few more items to check," Sam responded.

Making his way around the T-39, Sam looked under the left wing and spotted a small puddle of reddish fluid beneath the wheel well.

"Hey, boss, I think we got a hydraulic leak out in the left gear well," he yelled. "I think we outta let the crew chief take a look at it."

"Oh, balderdash. Lemme see this ocean of fluid," said C. R., waddling toward the gear well. "Just as I thought, Sammy m'boy. Why, there's not enough fluid in that puddle to fill a martini glass," challenged the Master Mixologist.

"Sir, it may be just a small leak now but it might progress into something really big. It won't take Sergeant Luke hardly any time at all to check the hydraulic plumbing in the well," beseeched the concerned copilot.

"Seen this type of thing many a time, Sammy. Nothing to lose sleep over. So why don't you tuck yourself into the copilot seat — er, if you forgot, it's the seat on the right," needled the Pompous One.

The Terrorific Twosome cranked up the Sabreliner, whistled through rows of parked aircraft, and bolted to a stop short of runway 13.

"Shave Three One, contact departure control on two five nine decimal four, winds one two zero, at eight, cleared for takeoff," the tower responded.

"Lineup checklist, Sammy," commanded C. R.

The Master Manipulator of Wires and Tires bolted the throttles forward and the jet turned onto the runway. As C. R. firewalled the go levers, the white and gray Sabreliner charged down the runway.

Hey, boss, I haven't finished the lineup . . . er . . . rotate," commanded Sam as the bird reached rotate speed.

"Wheeeeeeee! Gear comin' up, Sammy, and you can get the after-takeoff check as soon as you finish the lineup check. I don't think there's any hope for you, m'boy. You're so far behind the aircraft that if we ever crashed, you wouldn't even be a reliable witness," chastised C. R.

Sam flipped his checklist to the after-takeoff check. Looking across the cockpit, he spotted the gear handle in the up position with its red warning light illuminated.

"Sir, check the gear handle. We got a gear hanging or a gear door open. Better keep the airspeed below 180."

"Ahem, very good. Just wanted to see how long it would take you to observe this trivial malfunction. Now for a simple remedy — a quick recycle."

"But, boss, something might be screwed up," pleaded Sam.

"M'dear boy, fret not. A mere microswitch needs a little coaching." C. R. quickly recycled the gear. "There, ya see — three green. Now, up with the gear — Voila, red light out. Sammy, you gotta have a little faith."

Midway during the climbout, C. R. retired to the main cabin to stretch 'n snooze in the seat marked with a star.

Nearing Andy AFB, Sam glanced back into the main cabin and observed C. R. still logging first pilot "Z" time. Realizing that nothing short of a catastrophic happening would jolt the slumbering skipper, Sam popped the speed brake.

"Whhaaaa, yeeooow!! Oxygen masks on!" shrieked C. R. "Explosive decompression! Call Center, Sammy! I think I've got hypoxia — don't know if I can make it. Aaarrrgg."

Having achieved the desired response, Sam closed the speed brake and briefly turned his attention to his boss.

"Boss, everything is okay. I only extended the speed brake. Thought you would like to get set up for the arrival," soothed Sam.

Twenty miles out of Andy, approach control assumed radar responsibility for Shave Three One. "Shave Three One, maintain heading of 140 degrees to intercept ILS one nine right. Four miles northwest of the outer marker — cleared for approach," instructed the busy controller.

"Okay, Sammy m'boy. Glide slope indicator is off the top o' the case and here come da gear. Before-landing checklist," barked C. R.

"Sir, we don't have a gear-down indication on the left main and normal hydraulic pressure is dropping fast," Sam revealed excitedly.

"Calm down, Sammy. You're gonna get an ulcer worrying over a minor gear malfunction. I'll just pull this here emergency gear release out 11 inches and we'll press on like nothin' ever happened," boasted C. R. as he pulled the emergency cable. But even with the emergency cable fully extended, the gear warning indication persisted.

"Ahh, guess I didn't pull the release cable hard enough. Tell approach control we'll be making a low approach due to a minor problem. Get radar vectors for another ILS. Sammy, I'm going to let you assume control while I yank this thing out.

"Here she goes. Ugh — ooopps. Pulled the thing clear out. I must be in better shape than I thought," exclaimed the Maestro of Machinery.

"Boss, look at the gear lights. We still have something wrong with the left main and now we've got zero hydraulic pressure and a busted release cable. I think you outta declare an emergency and call Conference Skyhook," begged Sam. "And look at the fuel quantity, Sir! We're down to nine hundred pounds."

"Call Skyhook? Are you serious, Sammy? Those straphangers don't know a T-29 from a T-39. I'm surprised at you. We'll fly another couple of laps around the flagpole and pull a few Gs. That'll lock the left gear for sure," assured the Ace of Aerospace.

"Shave Three One, Andy Approach Control, turn right 120 degrees, cleared present position direct Riverdale Intersection. Hold on the zero zero seven radial. Maintain five thousand. Expect approach clearance time of 1650 zulu. Read back."

"We don't have fuel for all that — that's at least another hour, boss," cried the troubled copilot.

"Aaahh, eeerr, Andy Approach Control, this is Shave Three One. We gotta land right away due to minimum fuel. Aaaahhh, Andy, make that emergency fuel," replied C. R.

"Understand Shave Three One is emergency fuel. All runways at Andy closed until further notice. Say intentions, over!"

"We'll take vectors to the nearest airport," answered Sam.

"Turn left to 240 degrees, descend to two thousand five hun-

dred for vectors to runway 32, Davy Army Field — —
Air Force One, eight miles northeast of the outer marker. Cleared ILS runway 19 right approach. For radar monitoring contact approach control on — ."

"Sammy m'boy, did ya hear that? The Commander in Chief is comin' in. Look, there's Andy. We're goin' in to 19 right and we'll hustle this thing on the ground and catch a glimpse of the number one man. I bet there's live TV coverage on the ramp. Sammy, we really gotta look sharp on the landing and taxi-in," prompted C. R. Sam stared in disbelief.

The small jet whined over the runway threshold and smoothly settled onto runway 19 right. "Hey, hey, hey, Sammy! A real greaser — how 'bout those apples? And, as I accurately predicted, the left gear is alive and well. Call tower and tell 'em we'll be clearing at the midfield taxiway," ordered the Devious Driver.

Still moving down the runway with gusto, C. R. began a sharp braking turn onto the taxiway. Looking toward the ramp, the Portly Pilot commented, "Will you look at all the commotion on the ramp! Betcha we're on TV, Sammy — the eyes of the country are upon us, m'boy. Whaaaa! What's happening, Sammy! The left wing is dropping fast . . . "

The strain of the tight, high speed turn was too much for the unsecured left main gear. As it folded, the left wingtip struck the runway and the aircraft careened out into the middle of runway 19 right. The UHF radio, still tuned to approach control, came to life.

"Air Force One, Andy Approach. Aircraft immobilized on runway one nine right. Commence a go-around, climb to and maintain two thousand five hundred feet. Maintain runway heading for immediate vectors to one niner left."

Fire-fighting equipment, swarms of armed Secret Service personnel, security police, and a battalion of high ranking officers in staff cars descended upon the hapless duo in their crunched craft.

"Hey, boss, I think you've stepped on your, ah, necktie this time." stated Sam soberly.

"Ahem, aaahh, well, we declared an emergency. Must have been a bad part or materiel failure. Right, Sammy?" insisted the Hapless Pilot.

Sam opened the crew entrance door and was greeted by a half-dozen Secret Service agents in black overcoats. One of them came aboard.

"There are a few questions we have for both of you. Please come with us," directed the unemotional agent.

* * * *

Hours later, Colonel Gunn, a specially appointed investigator, escorted C. R. and Long Suffering Sam to guarded facilities at the BOQ

"Both of you are restricted to this base throughout the duration of the investigation. Wherever you go you will be accompanied by OSI Special Agents. You are both relieved of your duties and can expect intensive questioning. You are not to discuss this situation with anyone not concerned with the investigation. Do I make myself perfectly clear, Major Terror?" thundered the colonel.

"Y-ye-yessir," whispered C. R. sheepishly as the colonel departed.

"So we're confined to the base — ain't no big thing. Look, where there's a base there's a club, and where there's a club there's merriment and damsels eager for companionship," soothed the Paunchus Pilot.

Fetching a worn telephone directory, C. R. flipped through it swiftly. "Lessee, yeah, here's my favorite telephone number, hee, hee. Hey, Sammy, where's the phone?" shouted C. R. to Sam in the bathroom.

"Boss, you're forgettin' something — our full-time bodyguards and chaperones," reminded Sam.

"Yuk," gasped C. R. and slowly collapsed on the bed.

One of the Gargantuan characteristics of the C-5 is that even while taxiing, its jet blast is strong enough to scatter men and equipment all over the place.

Maintenance stands, vehicles and, in one case, a light aircraft have been overturned by this giant. And it's costing the Air Force cash to clean up in its wake.

Now that the newness has worn off the Galaxy, there is a tendency for ground personnel to consider it just another large aircraft. And that's the problem. You can't treat the C-5 like just another aircraft.

Jet wake of a C-5 on takeoff roll can reach 100 m.p.h. (86.9 knots) 200 feet behind it, but that on-the-runway blast is not causing the major problem. The problem stems from the 35 m.p.h. wake that extends for 440 feet behind the engines during taxi operations. That's enough to send ramp equipment tumbling if it's not tied down or out of the way. Power required to start a fully loaded C-5 moving normally generates 35 m.p.h. winds 945 feet behind the engines. This distance increases to more than 1,000 feet when the aircraft stops in a turn and power is applied to get it rolling again.

Preventing personnel injury and equipment damage means preplanning taxi routes and removing equipment, even if it's far down the fringe of the flight line. If you have problems judging distance, just remember that four football field lengths is about the minimum safe distance behind a taxiing Galaxy.

Keep this in mind during your flightline duties. MAC doesn't want its men or equipment damaged just because the Galaxy pays a visit. Remember, the pilots of these big birds have their hands full just taxiing. They can't always ensure they're clear in the rear during all taxi operations.

Storm warning flags usually signal an approaching hurricane, but not for the Galaxy, which can be a...

Hurricane on Wheels

Quick Stoppers

Unusual Wind Factor

Shortly after completing a weather reconnaissance track, the WC-130 dropsonde operator heard a thumping sound coming from the top of the fuselage. Suspecting a broken HF antenna, a crew member peered through the sextant and saw a broken rear mast on number two antenna. No big deal. But after the pilot landed, gusty 40 knot winds blew the antenna into the number three prop. The turning prop caught the antenna and snapped the forward mast. More damage resulted as the prop repeatedly whipped the antenna into the side of the fuselage.

Thump 'n Crunch

Winter has settled in for a long stay in many parts of the country and most birds have flown the coop for warmer domiciles south of the border. But, like people, 10 percent don't get the word. One feathered flyer, trying to catch up with the rest of the crowd, caught up with a huge aviator he hadn't seen before — a Lockheedius Starlifterius. The large waterfowl went on to the great nest in the sky and the Lockheedius landed at a nearby base with its radome wiped out.

There's not a great deal fast movers and buff drivers can do when a covey comes out of nowhere, except duck. But you might dust off loss-of-radome emergency procedures in section three of your Dash One. Aircraft may exhibit unusual in-flight problems if the radome comes unglued due to birdstrike or any other reason.

In the Treetop

After the H-53 had been airborne one hour on a night base surveillance mission, approach control notified the crew of radar targets in close proximity to the base. The pilot initiated a descent from the normal reconnaissance altitude in an attempt to identify the radar targets. Hoping to silhouette the targets against the skyline, the pilot descended below 1,000 feet. After numerous heading changes and an apparently undetected descent, the flight engineer, scanning from the right entrance door, saw a tree dead ahead and excitedly alerted the pilot. The pilot applied full up collective, but the helicopter struck the top of the tree. The impact broke the copilot's window and damaged the nose gear door. Sucessfully retreating from the prang, the crew checked flight controls and engines, bedded the chopper down back at the base, and called it a night.

Airborne defense surveillance at some overseas bases is a necessary mission, but playing cat and mouse with phantom targets in close proximity to heavily forested real estate tips the odds in favor of the mouse.

Crane Attacks Helicopter

This one is really difficult to imagine, but it happened. After landing from a deployment mission, the HH-53 began taxiing to its parking spot. It moved slowly past a large maintenance crane parked on a sloping apron adjacent to the taxiway. Rotorwash generated winds up to 35 knots in the confined space between the helicopter and the hangar, and the crane began to rock. The rocking motion somehow released the brakes on the crane, and to the horror of the chopper crew, it rolled down the ramp and into the tip path plane of the helicopter rotor blades. No one was hurt, but six main rotor blades were wiped out at a cost of $77,719.00.

Forgotten Scissors

No, this is not about a sewing class or paper dolls. It's about an airplane that nearly self destructed during a full stop landing. As it touched down, it experienced a vibration so severe that electrical components and communication and navigation gear separated from their mounts in the radio racks and the aft portion of the fuselage near the horizontal stabilizer was severely strained. The pilot, shaken up in more ways than one, managed to stop the vibrating aircraft on the runway.

Investigators found that the nose gear scissors pin was missing. Somehow the aircraft had managed to taxi out, take off, and shoot a touch and go landing without the pin. But during the final full stop landing, the scissors linkage disconnected, allowing the nosewheel to swivel at random and all heck to break loose inside.

Whoever was responsible for installing the pin properly came close to doing a lot more to the aircraft than shaking it up.

Vortex Fails Tail

A private pilot in a Piper Comanche, flying in clear, calm air at 8,500 feet, observed a "fast aircraft" crossing well in front of him at about the same altitude. Some three minutes later, the Comanche suddenly flipped over into a diving turn. The pilot reduced power and recovered the Comanche from the dive after losing approximately 2,000 feet.

After recovery, the pilot felt a slight buffet and could not maintain a constant heading, so he landed at a nearby airport. Post flight inspection revealed failure of the left stabilator at the outboard end of the sub spar and a buckled right stabilator.

Investigators concluded the pilot failed to avoid vortex turbulence generated by the fast aircraft crossing in front of the Comanche. The encounter caused excessive stresses on both stabilators. Regardless of the type of aircraft you fly, vortex turbulence can be hazardous. So stay up on the avoidance procedures. After all, you wouldn't want to damage your tail.

Even Pros Lose

The quiet of a small Arkansas town was greatly disrupted one day when frozen ducks started falling all over town. By the time it was over, nearly 100 lay scattered about. It seems that the "100 ship gaggle" had been skirting a thunderstorm when they were caught in a severe updraft, carried aloft in the storm, and frozen to death.

The moral we choose to draw from this is simply that no matter how much of a pro you are, thunderstorms never lose.

— WEEKLY SUMMARY, USN

Qs

Ragtime Blues

Following aircraft defueling operations, maintenance personnel discovered blue lint material in the upstream side of the fuel cart filter. This discovery prompted an unscheduled inspection of aircraft engine filters and, sure enough, all four engine filters were coated with the same material.

Maintenance inspectors directed a complete aircraft fuel system inspection to determine the source of the strange blue stuff. Deep within the fuel plumbing, inspectors found a blue rag clogging one of the fuel arteries.

Although the original amount of lint found was small, actions of the troops out on the ramp probably prevented in-flight fuel starvation and a lot of cockpit consternation.

Wonder how the rag got in there?

Huffing and Puffing

Cruising at flight level 380 with a cabin altitude of 21,000 feet, an EB-57 pilot experienced hypoxic symptoms during a hectic target mission. The pilot selected 100 percent oxygen, but his muscular tingling and unusual visual sensations failed to disappear. He began descent and the symptoms faded as his bird passed through 20,000 feet.

Back on the ground, the pilot felt that he might have experienced hyperventilation during his hassle with the interceptors. Exertion to maneuver his aircraft through a constant series of evasive maneuvers plus cockpit contortions to observe the "bad guys" on his tail probably caused the pilot to breathe at double time, concluded the flight surgeons.

Vaso-Motor Syncopal Episode

That's what happened to one aircrew member on an aeromedical evacuation training flight. In layman's terms, the man fainted. After sleeping on a bunk for an hour, he awoke in an uncomfortably warm cabin and decided to walk to the rear of the aircraft to cool off. As he jumped up and started walking he became dizzy and fell, striking his head on the floor of the cargo compartment. He regained consciousness in about 30 seconds and experienced no further problems.

Aircrew members should take it easy when arising from a rest period. The attending flight surgeon said that jumping up as quickly as this man did is conducive to a vaso-motor syncopal episode.

after deadline . . .

ANOTHER SOF SAVE -- While monitoring a C-5 takeoff roll, a SOF observed debris flying back from the aircraft but thought it was dirt and FOD kicked up by engine blast. As the aircraft accelerated down the runway, the SOF saw the number two forward engine cowling open and separate when the Galaxy rotated. He immediately relayed his observations to the crew via tower. Upon notification, the crew scanned the engine and confirmed the missing cowling.

After completing an uneventful landing, the crew stated that they noticed no abnormal engine indications or any sign of a compressor stall during takeoff roll and initial climb. Inspecting the engine, investigators found extensive bird remains throughout the intake, upper fan blades, and other parts of the engine and wing slats. Apparently bird ingestion created a compressor stall and the subsequent failure of the outboard blowout door to relieve the overpressure condition overstressed the cowling latches.

DECOMPRESSION AND RAMP PROBLEMS -- Recently a C-141 crew experienced an explosive decompression over the northeast United States when the pressure door, petal doors, and ramp separated from the aircraft. The crew executed an emergency descent and landed without further difficulties. Fortunately, no one was in the main cabin when the decompression occurred. Investigation is continuing at this writing.

This incident highlights increasing numbers of discrepancies with C-141 ramp locks and illustrates the urgency in insuring that all crew members and passengers seated in the main cabin keep their seat belts secured. No restriction is placed on the use of relief facilities, but periods of unsecured movement should be brief and kept to a minimum.

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Touch and Go

WHERE'S THE *#&% CREW BUS? YOU DID CALL ONE DIDN'T YOU?
NO, DIDN'T YOU CALL A CREW BUS?